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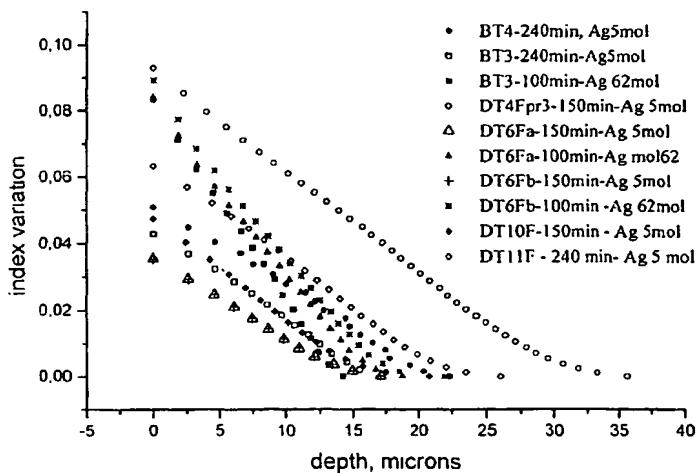
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(54) Title: POTASSIUM FREE ZINC SILICATE GLASSES FOR ION-EXCHANGE PROCESSES

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(57) Abstract: A fluorinated zinc-silicate glass having a composition, expressed in molar percent, of essentially from about 49 to about 69 % SiO₂, from about 2 % to about 30 % ZnO, from about 3.9 to about 18 % Al₂O₃, from about 10 % to about 16.7 % Na₂O, from about 0 % to about 13 % B₂O₃, from about 0 % to about 0.8 % MgO, from about 0 % to about 0.7 % BaO, from about 0 % to about 3 % ZrO₂, from about 0 % to about 6.7 % CaO, from about 0 % to about 0.11 % As₂O₃, from about 0 % to about 0.07 % Sb₂O₃, from about 0 % to about 3 % NaF and from about 0 % to about 3.9 % AlF₃. The glass can be prepared in optical quality slabs, is chemically durable in water, NaNO₃ salt melts and boiling NaOH, and has a refractive index close to that of the optical fiber to reduce coupling losses. The glass includes Na as a single alkali ion species exchangeable for silver in an ion-exchange process that provides a sufficient index change for waveguiding.

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B. FIELDS SEARCHED

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|------------------------------------------------------------------------------------|-----------------------|
| A | US 6,410,467 B1 (Dickinson et al) 25 June 2002 (25.06.2002) Whole document. | 1-11 |
| A | US 6,503,860 B1 (Dickinson et al) 07 January 2003 (07.01.2003) Whole document. | 1-11 |
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